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FAQ

GUI Toolkit

1 [What is a graphical hierarchy?](#)2 [What are options?](#)3 [What is the difference between a local option and a nonlocal option?](#)4 [What is the difference in using local options vs. fields?](#)5 [What is the difference between the graphical hierarchy and the class hierarchy?](#)6 [I added a button to an HBox but it went somewhere else. Why?](#)1 [What is a graphical hierarchy?](#)**Answer:**

A *graphical hierarchy* is defined by the nesting of graphical containers. If a graphic is any container, it can contain other graphical objects. These objects are its children in the graphical hierarchy.

2 [What are options?](#)**Answer:**

An *option* is one way to store a property of an object. (A *field* is another way.) An option has a default value and if the value of the property is not set, it automatically has this default value. In the case, the Curl™ language doesn't need to physically store a value on the object. This can result in substantial space savings when the property is seldom set.

Change handlers can be attached to options. A change handler is a block of code that is executed when the value of the option changes.

3 [What is the difference between a local option and a nonlocal option?](#)**Answer:**

The value of a *nonlocal* option is inherited from the parent container if it is not set on the container. A *local* option is not inherited from its container. If its value is not set, it will have the default value specified when the option was declared.

Nonlocal (inherited) options are usually used when it is expected that most objects in a container share the same value. For example, color is a nonlocal option because all text in a given container usually has the same color. Another way to look at it is this: if you are defining a property on a container, you can be able to change its value on a container and have all objects inside the container be affected. Use a nonlocal option.

4 [What is the difference in using local options vs. fields?](#)

Answer:

Using a local option can save space if the property usually has the default value. A local allows you to specify a change handler. On the other hand, a local option is slower (both access) and it takes up more space if it is assigned a value. In short, both local and nonlocal trade speed for convenience and space savings.

5 What is the difference between the graphical hierarchy and the class hierarchy?**Answer:**

The class hierarchy is determined by inheritance and is defined at compile time. The graphical hierarchy is determined by physical containment of graphical objects within one another. It is undefined until runtime. It can change at runtime if objects are created, deleted, or moved.

6 I added a button to an HBox but it went somewhere else. Why?**Answer:**

When a Graphic already has a parent, and then you attach it to a new parent, the Graphic automatically detached from the old parent. This sometimes happens when you don't expect it. For example, consider this fragment of a Curl applet:

```
{let h:HBox = {HBox "Click here:"}}
{h.add {CommandButton label="Hello"}}
{value h}
```

This surprisingly places the button before the "Click here" text. This is the most common problem. Here's what happened:

At the top level of a Curl applet, each value is added to the file as it is computed. The CommandButton is added to the HBox, but the result of calling add is the thing that was added, so this is removed from the HBox and added to the document. The {value h} expression then adds the HBox to the document, but by then all it contains is the text.

The solution is to surround all of the code in the value block:

```
{value
  {let h:HBox = {HBox "Click here:"}}
  {h.add {CommandButton label="Hello"}}
  h
}
```

The {value ...} form returns only the last expression evaluated. Thus the result of h.add is the button, and the button is not moved.

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FAQ

GUI Toolkit

1 What is a graphical hierarchy?

2 What are options?

3 What is the difference between a local option and a nonlocal option?

4 What is the difference in using local options vs. fields?

5 What is the difference between the graphical hierarchy and the class hierarchy?

6 I added a button to an HBox but it went somewhere else. Why?

1 What is a graphical hierarchy?

Answer:

A *graphic hierarchy* is defined by the nesting of graphical containers. If a graphic is any type of Box, it can contain other graphical objects. These objects are its children in the graphical hierarchy.

2 What are options?

Answer:

An *option* is one way to store a property of an object. (A *field* is another way.) An option can have a default value and if the value of the property is not set, it automatically has this default value. In this case, the Curl™ language doesn't need to physically store a value on the object. This can result in a substantial space savings when the property is seldom set.

Change handlers can be attached to options. A change handler is a block of code that is run whenever the value of the option changes.

3 What is the difference between a local option and a nonlocal option?

Answer:

The value of a *nonlocal* option is inherited from the parent container if it is not set on the object itself. A *local* option is



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local and default

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